

MEETING HIGHLIGHTS
Hanford Site Technology Coordination Group
Management Council

August 18, 1999
EESB – Snoqualmie Room
8:15 a.m. – 12:00 noon

PURPOSE

- Better understanding of how tank waste is transported through the vadose zone.
- Discuss Performance Measure recommendations and implementation needs and the relationship to the S&T Workshop results.

AGENDA

INTRODUCTIONS/ANNOUNCEMENTS

Lloyd Piper opened the meeting and announced several personnel changes at DOE. He also discussed changes to the FDH and LMHC contracts. He said that ORP's decision to not be a part of the STCG is being revisited.

UPDATES

- **WGA Workshop** – On July 20-21, PREC was host to the WGA Workshop focusing on contract reform and regulatory flexibility. Follow-up discussions were encouraged, and a third workshop will be held in December in Albuquerque.
- **Cross-Complex Advisory Board / Energy Community Alliance Meeting** – A meeting has been planned here in September. Pam Brown was hoping to get an opportunity to make a presentation encouraging other sites to directly involve their stakeholders in their STCGs.
- **Subcon Subgroup Update** – A number of technical presentations were given at the Subgroup meeting. One of the discussions was on the transport of saline tank wastes through the vadose zone. The information presented challenges historical vadose zone transport assumptions, so the Subgroup requested that the presentation be given to the Management Council.

TRANSPORT OF TANK WASTE IN THE VADOSE ZONE

This is an EMSP project, funded by EM. The purpose is to study contaminant transport in the vadose zone. In the past, attempts to understand vadose zone flow and transport processes failed to take into consideration that the waste is highly saline and very dense. Field observations show that the fluids are moving faster and farther than originally thought.

SUBGROUP UPDATES – Mixed Waste and D&D

The Mixed Waste Subgroup communicated to Jim Turi, DOE-HQ, their concern that the STCG Subgroups (and the Hanford Projects) prioritize S&T needs, then HQ changes the priorities. They also said that funding might come to Hanford for the long-length equipment for TRU project.

The D&D Subgroup has two decision forms that will be sent out for a vote, one is a name change and one covers the scope of the Nuclear Materials Focus Area.

PERFORMANCE MEASURE AD HOC COMMITTEE RECOMMENDATIONS

Members of the Ad Hoc Committee discussed their recommendations regarding the four EM corporate performance measures for S&T. The purpose of the committee is to determine how we think these measures should be fleshed out to meet Hanford needs. A list of recommendations was provided; they will be documented in a letter from Lloyd Piper.

FUTURE AGENDA ITEMS

The group looked at the top five strategic agenda items on the list and deleted three of them. Two additional items were added. The following agenda items will be scheduled for upcoming meetings:

- What if the BNFL vitrification program doesn't get funded?
- CDI update and canyon volume for immobilized waste storage vs. empty tank volume
- Hanford Waste Disposition Maps and risk numbers
- Status of the S&T Workshop recommendations

MEETING REVIEW/WRAP-UP

The next meeting will be held on October 20, 1999, from 8:15 a.m. to 12:00 noon, in the EESB Snoqualmie Room.

ACTIONS

No actions were recorded.

**HANFORD SITE TECHNOLOGY COORDINATION GROUP
MANAGEMENT COUNCIL MEETING MINUTES**

**August 18, 1999
EESB – Snoqualmie Room
8:15 a.m. – 12:00 noon**

INTRODUCTIONS/ANNOUNCEMENTS

Lloyd opened the meeting and introductions were made around the room. He announced several personnel changes, including Beth Bilson replacing Linda Bauer, Sandy Johnson being selected to be Assistant Manager for Safety, and Paul Kruger moving to ORP. Bob Rosselli has been detailed into the Manager's office to help with the reorganization. Changes will be pretty much in place by the first of October.

Reorganization and restructuring is ongoing. FDH is removing a number of management layers. They will move people from indirect activities to Projects. The LMHC contract will be moved from the FDH scope and become a separate prime contractor reporting to ORP.

ORP's decision to not be part of the STCG is being revisited. Any comments on this subject should be given to Bill Taylor.

Shannon presented the purpose of the meeting and reviewed the agenda.

UPDATES

WGA Workshop – Michael Jacobson, PREC

On July 20-21, PREC was host to the WGA Workshop focusing on contract reform and regulatory flexibility. Approximately 130 people attended. The highlights of the first day were Tom Fitzsimmons' and Keith Klein's presentations. Tom said, "Don't let my regulators get in the way of moving forward to get work done." They went through a number of case studies on regulatory flexibility. Contract reform was also discussed. Ken Campbell, FDH Inc. talked about ways incentives could be formatted better. Dennis Huston, BHI, gave a discussion about contract mechanisms available (i.e., don't let the procurement people get in the way).

The second day was facilitated brainstorming to get people together to look at issues. The main benefit of the workshop was the dialog between parties. The main criticism was that there were few outcomes. We were hoping for a larger STCG presence. We will be putting out a meeting summary and evaluation results. Follow-up discussions are encouraged, and a third workshop will be held in December in Albuquerque.

Comments/Questions:

Pam Brown feels the problem is going to be communication between Tom Fitzsimmons and his people at the Site. She thinks PREC could help with middle management.

Debbie Trader said it was a good exchange with a lot of different perspectives. She appreciated

hearing from regulators and contracts people. The bottom line is talk early and talk often. Consider the regulators and procurement staff as partners in getting the work done.

Jerry White suggested that Tom and Keith make sure their messages get down to their people.

Pam Brown suggested that they establish performance expectations for people.

Rick Brouns was pushing for outcomes. The second day didn't have enough of the right people there to accomplish anything. He would encourage feedback to strongly focus on getting some outcomes.

Cross-Complex Advisory Board / Energy Community Alliance Meeting – Pam Brown, HAB

Cross-Complex Advisory Board – Because of the concern at HQ about STCG functioning and the fact that we might be losing some funding, a meeting has been planned here in September. There is no stakeholder participation in the STCGs at other sites. In order to sustain our organization, we want to encourage other sites to involve their stakeholders. HQ sets the agenda for the meeting, but we hope to get an opportunity to address this concern with them.

Energy Community Alliance meeting – This meeting is being planned for September 16, with 10 different sites around the Complex. It is the third time they've met outside of Washington, D.C. Gerald Boyd will be speaking at the conference. Everyone is welcome to attend.

Subcon Subgroup Update – Fred Serier, DOE-RL

The following items were discussed in the Subsurface Contaminants Subgroup:

- Clark Carlson presented the results of testing a variety of ion exchange materials for extracting strontium from 100-N groundwater. Results were published in a PNNL report and in Science.
- There was an update on the Carbon Tet ITRD project. A meeting was held on June 17-18 that focused on characterization technologies. The project is moving forward.
- There was an update on Smart Sampling, which uses geostatistics coupled with economic considerations to evaluate sampling and analysis schemes.
- Andy Ward presented information on the transport of saline tank wastes through the vadose zone. The information presented challenges major assumptions to date, so we asked him to give the presentation to the Management Council.

TRANSPORT OF TANK WASTE IN THE VADOSE ZONE

Andy Ward, PNNL

This project is an EMSP project, funded by EM. This was the only hydrology proposal funded last year. It's been quite a challenge. The purpose of the project is to study contaminant transport in the vadose zone. It will focus on the characteristics of the fluid. The waste is highly saline and very dense. In the past, attempts to understand vadose zone flow and transport processes failed to take into consideration these concerns. During the infiltration of the dense, viscous, saline fluids normally associated with tank wastes, wetting front instabilities can develop and eventually overcome dispersive capillary forces, leading to increased penetration depths.

Field experiments are being conducted for long-term salt plume migration and spatial variability in constitutive properties. They are seeing that the vapor magnification is valid, and the effects are

made worse with the heat of leaking tanks. If you have a forced medium and a dense fluid, it will cause the water to move more rapidly through the soils. Salt plumes can pull water from about 70 feet in the course of a year. This makes the plume wetter and able to form a finger and move faster.

Summary

- Traditional vadose zone theory is inadequate for explaining field observations
- Basic research in flow/transport processes is needed to better understand subsurface contaminant migration
 - Salinity, wetted geometry and vapor transport may enhance transport
 - Develop and incorporate theory describing these processes into a numerical model
- Preliminary results show surface tension density viscosity an hysteresis must be considered
- Product – a tool that DOE can use for prediction and evaluation of different SST retrieval/remediation strategies

Questions:

Lloyd Piper asked if there seemed to be any limits to how deep the plume would go. Andy said it probably would go deeper in gravel. The soil type would be the most important factor. Another important thing is that if the finger is well enough advanced, it could penetrate a layer instead of being dispersed.

Rick Brouns asked if there were obvious simple techniques to modify surface tension, etc. Andy said that if you're dealing with really high surface tension, you could add organics to increase tension. Some salts cause a reduction in surface tension. They are in the process of determining which component is more dominant (surface tension or density).

Michael Jacobson asked if they were trying to predict what a breakthrough distance would be. Andy said they would look at leak volume, leak rate, and soil condition.

Steve Skurla commented that when you give up the idea of a traditional shape of a plume and accept the fact that there is an irregular plume, you won't be able to characterize it by using one or two holes. How are we going to characterize the soils? Andy said that modeling and characterization are two separate entities. You are in a better position to say where to characterize.

Shannon Saget suggested horizontal drilling. Andy said it was a good idea to do a horizontal well; you would have a much better chance to hit a finger.

UPDATES FROM THE MIXED WASTE AND D&D SUBGROUPS

Mixed Waste – Ellen Dagan, DOE-RL

They had a conference call with Jim Turi at DOE-HQ. Their biggest concern is that the Subgroups (and the Site projects) prioritize S&T needs, and then HQ changes the priorities.

Training on the Technology Management System (TMS) is scheduled for September 5 and 8.

Good news – the long-length equipment for TRU (robotics) project proposed to the Mixed Waste Focus Area looks like it might be funded for \$2.5 million. This project will take long-length equipment

at the site and cut it up for transport.

D&D – Steve Weakley, PNNL

Two Decision Forms, one covering a name change for the Subgroup and one covering the scope of the Nuclear Materials Focus Area, are ready for a vote by the Management Council. Since we did not have a quorum of voting members at this meeting, we decided to vote offline.

CDI is moving along. In August there is a lot of robotics work going on.

We have two ASTD projects – one deals with a robot work platform and one is a laser cutter system. Next month an RFP will go out to ten selected vendors to bid on work for the robot work platform. We are also working on the laser cutter ASTD project with the Nevada Test Site. Roger Pressentin has been asked to go to Las Vegas to make a proposal to use it for CDI.

Lloyd Piper asked what the timeline was for a Record of Decision (ROD) on CDI. The timeline is funding-dependent. They are hoping to finish characterization next fiscal year, performance assessment in 2001, and get a ROD signed in 2002.

PERFORMANCE MEASURE AD HOC COMMITTEE RECOMMENDATIONS **Ad Hoc Committee Presentation**

Jerry White, BHI:

The EM-50 planning group was formed by Gerald Boyd to develop a set of recommendations for DOE to be more responsive to industry. How do we measure our performance? In the S&T Program Plan, four performance objectives were identified. Our local ad hoc committee was to determine what we thought these measures should be at Hanford.

- Reduce cleanup cost
- Provide value through technology deployment – more than just number of deployments
- Meet high-priority needs – intent is not to have the Focus Areas define high-priority needs, but how many of the Site high-priority needs were met – Hanford Site perspective
- Reduce technology risk

The purpose of our ad hoc committee is to determine how we think these should be fleshed out to meet Hanford needs.

Debbie Trader asked if technology risk is tied to the waste disposition maps. Jerry said that the ad hoc committee recommendation is, “Don’t use the AVS database for this measure.”

Craig Richins, DOE-RL:

We asked, “Does it make any sense for us to measure the four measures?” Our answer was “Yes, the four corporate measures are applicable here.” We can meet the corporate need for this. We are still developing the input on how we would like to do this. We have already proposed some tentative measures to the Site. This is a very short-term activity. By the end of the first week of September, Keith Klein would like to see some performance measures.

General Recommendations from the Ad Hoc Committee

- We can report progress against all four performance objectives.
- We need to provide input on how.
- S&T should be integrated into projects, not independent.
- S&T performance measures should reflect site goals and objectives (i.e., cleanup progress).
- S&T objectives should drive both planning efforts and measurable outcomes.
- We do not want to burden projects with meaningless reporting requirements.
- Use the Pollution Prevention Program as a benchmark (cost savings, communications, alternatives/benefits analysis).

We would like to shape our performance measures to answer the question, "Are we getting our needs met on Site?" Part of the effort is to streamline the process and get the databases to work together.

Lloyd Piper said that technology might result in increased cleanup performance. Where does that fit in the four measures? Craig said that it's a very good value to look for. Even if it costs more, if the cleanup is twice as good, it's a positive outcome.

Jerry said that one of the recommendations HQ made is that they should do an evaluation of the Focus Areas and get input from the sites.

Pam Brown asked if this was the same process as the PAIT integration effort. Debbie Trader said that they are all tied together.

Michael Jacobson commented that trying to capture the value of technology is difficult. Are you willing to pay more for a technology that compresses the schedule in half? Craig said that was one thing we would be interested in looking at. We need to keep the endstates in mind, though. In summary, Hanford will be able to meet the HQ requirements for reporting against the S&T performance measures.

Terry Walton, FDH:

Two things came out of the group that assessed the EM Program:

- Expectations should be outcome-based.
- We should utilize the line programs to defend the S&T Program.

If we come to agreement on a set of expectations, the challenge for the group is to develop specific measures for those expectations. What are we going to measure here, and then how can we use that to feed the four HQ measures?

He asked if the Management Council agreed with the recommendations to date and, if so, can the ad hoc committee send out a letter?

Lloyd Piper feels the ad hoc committee is doing an excellent job trying to force fit the HQ performance measures. Lloyd can forward the ad hoc committee's report on to EM-50 as a product of the ad-hoc committee, not necessarily endorsed by the Management Council.

Pam Brown is encouraged by the recommendations. Gordon Rogers said a letter should go forward

to HQ.

Ellen Dagan asked if there was any discussion on possible incentives. Craig said that Keith Klein has changed how we do things on Site. Jerry said that the challenge is to put together a program that helps the Site. Too often, the user doesn't use a new technology because he has to meet schedule and cost constraints, and doesn't get any benefits for using the technology. Shannon said that TIPs would help, since we are actually putting the technology into the baseline.

Pam Brown asked if there had been any exploration of the question of how quickly the technology needs to pay back. Will that be incentivized? Craig said that the contract doesn't incentivize the process; it incentivizes results. Part of the shift now is to look at more multi-year incentives.

Debbie Trader thinks the ad hoc committee has done a lot of work and gone into a lot of detail. With regard to risk reduction, our recommendations are far from the HQ measure. Lloyd said our focus ought to be more on how to improve the subjective nature of the numbers. Jerry suggested an alternate approach of recommending a whole new system. We should tell them what we plan to do with the AVS system and what we recommend to do it better.

FUTURE AGENDA ITEMS

The Management Council was asked to determine if the following strategic agenda items should still be on the list:

1. How to get funding to the Site in a timely manner
2. Implications of Idaho as a Lead Site
3. What if the BNFL vitrification program doesn't get funded?
4. Integration of technology into the Site baseline, budget, and schedule (TIPs)
5. CDI update and canyon volume for immobilized waste storage vs. empty tank volume

It was decided to cross out the first two items. The third item will be discussed at the October meeting. The fourth item could be handled by updates offline. The fifth item will be scheduled soon.

Added to the list are:

- Gerald Boyd visit [did not come as expected, so September's meeting was cancelled]
- Hanford Waste Disposition Maps and risk numbers
- Status of S&T Workshop recommendations

MEETING REVIEW/WRAP-UP

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